WISCONSIN INDUSTRIAL ENERGY GROUP

To: Senate Committee on Environment and Natural Resources

From: Todd Stuart, Executive Director
Wisconsin Industrial Energy Group, Inc.

Re: Testimony in opposition to Senate Bill 81

Date: September 25, 2007

Thank you for the opportunity to present testimony on this important subject. The following comments are submitted on behalf of the members of Wisconsin Industrial Energy Group, Inc. (WIEG) in opposition to Senate Bill 81.

WIEG is a non-profit association of 30 large energy consumers that advocates for policies supporting affordable and reliable energy. Since the early 1970s, WIEG has been the premiere voice of Wisconsin ratepayers and an engine for business retention and expansion. Our member companies spend over $200 million annually on electricity; they collectively employ more than 50,000 Wisconsin residents, who are — themselves state taxpayers and utility ratepayers. WIEG members represent most major Wisconsin manufacturing industries, including paper, food processing, metal casting and fabricating.

Industrial customers are very concerned about the reliability of electricity at affordable rates. Rates have been rising in Wisconsin and elsewhere, but industrial rates rose faster in Wisconsin between 2000 and 2005 than in any other state in the Midwest, and actually surpassed the Midwest average in 2003. The Wisconsin economy will be at risk of job losses and electricity demand destruction, especially in the manufacturing sector, if rate increases are not managed effectively.

By our estimate, Wisconsin is currently facing $13 billion in utility-related infrastructure costs over the next decade. Over half of this $13 billion is due to government mandates for renewable energy and environmental compliance for air emissions standards (but not including Global Warming). The addition of $1 billion each year to the electric rate base must result in double digit percentage rate increase requests in utility rate cases in the foreseeable future. Double digit rate increases would seriously harm our competitiveness and would lead to the loss of factories and jobs.

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We represent some of the largest manufacturers and energy consumers in Wisconsin. Some WIEG member companies have monthly energy bills exceeding one million dollars and are extraordinarily sensitive to price changes. They conserve energy not only because it is the right thing to do, but also to reduce costs and survive economically.

WIEG believes Global Warming is a global problem. CO2 is a global pollutant. It therefore needs a global solution. Under current law, state air emissions rules are generally no more stringent than the federal standards. WIEG believes this is sound public policy and we believe Global Warming legislation is best dealt with at the federal level. It does not make sense to make Wisconsin a regulatory island, especially when Wisconsin is part of an electricity market spread across 15 states and several Canadian provinces. Should Wisconsin adopt more stringent Global Warming regulations than the federal government, our members will be at a tremendous competitive disadvantage, and at a time that they are already facing fierce global competition and tremendous upward pressure on energy rates.

WIEG has the following concerns regarding SB 81:

First, we have serious concerns over the costs of SB 81. WIEG is not aware of any cost-benefit study or other research developed by the DNR, the PSC or state utilities to quantify the compliance costs of SB 81. No study has been done to evaluate the impact of SB 81 on electric reliability or electric rates.

However, we do know that Wisconsin's rates have been rapidly rising and will continue to do so. In the last four years alone the Public Service Commission has approved roughly $6 billion in costs for new natural gas, coal and wind generation, new powerlines and new energy efficiency measures. This new investment has translated into 40% utility rate increases over the last five years.

Wisconsin utilities already plan to spend roughly $4 billion to meet CAIR, CAMR and other federal air programs to dramatically reduce emissions. Preliminary PSC estimates are that the costs associated with CAIR and CAMR would amount to average increases of 9%-10% for Wisconsin customers. And these figures do not include costs to comply with a CO2 mandate. Further, Wisconsin is already spending billions to meet the 10% Renewable Portfolio Standard by 2016. To meet the requirements of SB 81 and it's even greater reductions targets, rates related to investments in new infrastructure, retrofits and fuel switching must rise dramatically.

Indeed, to meet 1990 levels of CO2 by 2020, Wisconsin's coal-fired units will need to be either shut down completely or retrofitted with carbon capture and sequestration technology. There is really no other way of meeting these goals. However, the technology necessary to meet this goal is not yet commercially viable, and Wisconsin does not have the geologic formations necessary for carbon storage. In theory, we would need to build interstate pipelines down to Southern Illinois to bury the emissions underground - assuming the technology works by 2020.

This could strain Wisconsin's power grid and reliability, as it forces the premature shut down of coal-fired units that could no longer provide competitively priced electricity. With 60% - 70% of its generation coming from coal-fired plants, Wisconsin has one of the highest ratios of coal generation in the nation.

Wisconsin is part of an electricity market called the Midwest Independent Transmission System Operator (MISO). The MISO Day 2 market began on April 1, 2005. The economics and control of the dispatch of our power plants comes through the MISO system. Wisconsin ratepayers have already seen escalating costs because of this market. If our utilities are forced into producing higher priced electricity as will be the result of SB 81, the MISO market will be very unforgiving to Wisconsin customers. For large industrial consumers with energy bills of well over $1 million per month, the rate impact will be significant.

Second, WIEG is concerned about the impacts of SB 81 on Wisconsin's overall economy. As a percentage of total employment, Wisconsin employs the second highest number of manufacturing workers in the U.S. Like other Midwest states, Wisconsin is struggling to cope with rapidly escalating energy costs and the loss of well-paying manufacturing jobs. Manufacturing jobs pay 26% more than the average wage for all private-sector workers.

Since 1999, Wisconsin has lost 100,000 manufacturing jobs during a time period when natural gas prices soared over 150%. Last year alone, Wisconsin lost 10,000 manufacturing jobs, a decline of about 1.5%. Wisconsin and the Midwest region are creating jobs at an anemic pace; currently we have the 5th lowest job growth in the country. Wisconsin was featured just last week in a story on aol.com called "Worst States for Job Growth."

As stated earlier, no state agency or utility has conducted a study on the electric reliability or electric rate impact of this bill. The Electric Power Research Institute (EPRI) estimates pending federal legislation could cost the economy between $400 billion and $1.8 trillion over the next four decades. In testimony before the House Energy and Commerce Subcommittee on Energy and Air Quality, the CEO of Virginia-based Old Dominion Electric Cooperative stated that the best-case estimates for carbon capture and sequestration would increase the cost of electricity 60-80% over current prices. He based his figures on an anticipated cost of $27 per ton of CO2, which he asserted will drive a 50% increase in the wholesale cost of electricity. If $100 per ton of CO2 was assumed, then wholesale prices would triple. We don't know what the impact would be if Wisconsin adopted laws separately from the federal legislation, but if the state becomes a regulatory island, one can assume the costs would be greater, especially with participation in the MISO market.

WIEG members use tremendous amounts of energy and some are extremely price sensitive for energy costs. Increased rates hurt their bottom lines. Should this trend continue, these companies could shift their production to other parts of the US or shift the production overseas.

There is already evidence of demand destruction happening in Wisconsin. Rates have gone up 40% statewide in the last 5 years. Many utilities are reporting 1% growth or less for their industrial customers. In their pending rate increase filing before the PSC, We Energies is requesting $61 million (9% of their requested increase) for their sales forecast "revenue deficiency." This means the industrial sector is not expanding at normal growth rates. In other words, when the economy does not grow, utilities will request more revenue from all customers to make up for the difference. When jobs are lost, it means all customers -- including homeowners -- pay more for energy. This economic death spiral starts with large price increases.

SB 81 would enact emissions reductions that are "permanent, quantifiable, verifiable and enforceable." It would be very difficult to apply that definition to agriculture, waste, small businesses and the residential sector. That means emissions reductions on a statewide basis would be focused on the utilities and industrial sectors, which account for about half the CO2 emissions in Wisconsin. Our member companies would most likely be disproportionately bearing the costs, both directly and indirectly.

Third, it is important to point out that the utility industry is very different from other businesses. They are heavily regulated monopolies with billions in assets. Fundamentally changing the electric industry is not a process that can happen overnight. They say it takes several miles to turn around a battleship. The bill requires the DNR to have rules in place by 2013. However, utilities plan in 10 year horizons to get "iron in the ground." Meeting the 1990 emissions level by 2020 in one of the most coal-dependent states is going to be extremely difficult to achieve from a technical standpoint, even under best-case conditions.

Recommendation/Conclusion

Defer action based upon pending federal legislation. Nearly all observers believe Congress will act on Global Warming legislation either this session or next session. CO2 is a global problem and should be addressed at the federal level and through international framework agreements. This is our most preferred policy option, as it provides a level playing field for all of our member companies.

Allow the Governor's Task Force on Global Warming to complete its work. The Task Force is currently working on these issues and expects to wrap up near the end of 2007. Experts from all around the state are involved. WIEG's board chairman serves on the Task Force. Several WIEG member companies serve on the various subcommittees. We should allow key stakeholder input to tailor recommendations for our state's unique characteristics.

Study SB 81's impact on electric reliability and rates. A bill of this magnitude should be given a thorough analysis. Lawmakers should be aware of the economic consequences of SB 81 before taking executive action.

Amend SB 81 with safeguards to protect consumers. WIEG believes that further "off-ramps" or "safety valves" should be incorporated into SB 81 to mitigate the negative rate impact. Consumers would also be protected by addressing the real world barriers to the implementation of the legislation.

You may recall that last session Governor Doyle and the Legislature came together on 2005 Act 141, the energy efficiency and renewables act. The overall intent of the law was to not only promote energy conservation, but to ultimately control, or even drive down, the cost of electricity and natural gas. The authors were very explicit in identifying their concern that the legislation should have a hold harmless impact on Wisconsin ratepayers. WIEG was supportive of the new law, and all of the members of this committee voted for it last session.

Under Act 141 off-ramps, the PSC shall grant a delay in the implementation of the renewables mandates for the following reasons:

- Undesirable impacts on electric reliability
- Unreasonable increases in electric rates
- Delays in receiving the required siting or permitting approvals
- Transmission constraints that interfere with the economic and reliable delivery of renewable energy

Finally, cost studies are performed regularly for the utilities' compliance with the renewable portfolio standard and consumers can petition the PSC if they feel rates are rising too fast (Wis. Stat. 196.378 **(2)** (g) 2). WIEG believes that all the off-ramps provided in Act 141 should be included in an amendment to SB 81.

WIEG advocates for policies that drive affordable and reliable energy. Energy, economic development and environmental policy are all inextricably linked together. Under SB 81, we would be at a tremendous competitive disadvantage. WIEG members are already facing fierce global competition and tremendous upward pressure on energy rates. These are very real costs that will have very real economic consequences.

Safe Climate Act Public Hearing

Testimony of Scott R. Dettman

September 25, 2007

Hello, and thank you for providing me the opportunity to speak today. I am a junior studying political science and comparative literature at UW-Milwaukee. Currently I am Coordinating a non partisan political campaign for WISPIRG. This campaign is promoting the idea of civic engagement among the youth of America, by addressing Presidential Candidates directly and asking them What Their Plan is to solve some of the major issues that young people care about, perhaps the very largest issues being global warming. I was offered this position this past summer when I had the opportunity as well as the privilege to work, raising funds and spreading awareness, for environmental organizations like WISPIRG and Wisconsin Environment. While doing this work I learned a great deal about the pressing and frightening environmental issues that we face in our state, nation, and world. It was with this understanding and heightened sense of awareness that I came to grips with the harsh yet undeniable reality, that the problem of global warming or global climate change, is not the problem of future generations but rather the most pressing issue facing our society today. As a people, we find ourselves at a very important crossroads. If we do not act we may for the first time, since the early stages of man, find ourselves entangled in wars not rooted in ideals and differing customs, but rather, wars over the water that we drink and that the air that we breathe. It is at this time in our history that we possess not only the ability for progress, but also the capacity. It is at this time that we not only know the problem, but also the solution. Therefore, as a concerned citizen of this state, nation, and this world I call upon our leadership, our servants of the public. To take this opportunity and assume the

responsibility of leading us into a better, safer, and sustainable tomorrow, by endorsing the Safe Climate Act today.

Thank you,

Scott R. Dettman

To: **Wisconsin Legislature**

From: **Bill Skewes, Executive Director**
Wisconsin Utilities Association

Re: **SB 81 Testimony**

Date: **September 25, 2007**

Good morning Mr. Chairman and members of the Committee. My name is Bill Skewes and I am the Executive Director of the Wisconsin Utilities Association (WUA), representing Wisconsin's investor-owned gas and electric utilities. We appreciate the opportunity to testify today in opposition to SB 81which, among other things, seeks to reduce greenhouse gas emissions by 2020 to 1990 levels.

The Wisconsin Utilities Association (WUA), urges you to consider a number of important factors involved in this truly global issue before forwarding any climate change legislation. WUA's member companies clearly recognize the growing concerns regarding the threat of climate change and, in fact, our industry has led all other industrial sectors in reducing greenhouse gas emissions. Through various programs and mechanisms such as the Wisconsin Voluntary Early Emission Reduction Registry, that commitment continues.

No matter what the ultimate path is, success in that mission – while maintaining a safe, reliable and affordable electricity supply – will require an aggressive and sustained commitment by the industry and policymakers to the development and deployment of a full suite of technology options, including:

- An intensified national commitment to energy efficiency, including advanced efficiency technologies and new regulatory models;
- Accelerated development and cost effective deployment of demand-side management technologies and renewable energy resources; and
- Advanced clean coal technologies.

Although some of these options are currently available – albeit at a higher cost than conventional generation sources – many are not. All have different time horizons but all are critical to the dual goals of addressing greenhouse gas (GHG) emissions and maintaining a reliable, affordable electricity supply in a carbon-constrained world. In addition, because of the national and more importantly global nature of the issue, solutions are best considered at the federal level and should, in fact, require participation of the entire world economy.

Based on policy principles of the national energy industry as a whole, WUA will continue to emphasize the importance of:

- A reliable, stable and reasonably-priced electric supply to maintain the competitiveness of the Wisconsin economy;
- A fuel-diverse generation portfolio to assure system reliability, energy security and price stability; and
- Solutions compatible with a market economy that deliver timely and reasonably priced greenhouse gas reductions.

As policy makers at all levels consider alternatives, WUA urges the Wisconsin Legislature to await the recommendations of the Governor's Global Warming Task Force before taking further action. Many stakeholders, especially the utility sector, have invested a significant amount of time and resources participating in this effort by providing technical expertise on the working groups and the Task Force in general which has helped to inform the discussion of this important issue. Thank you.

My name is Karen Schapiro, and I am the Executive Director of Midwest Environmental Advocates, Wisconsin's only non-profit environmental law center. Thank you for the opportunity to speak on this urgent matter.

The climate of our world is changing. Of this there is little doubt. According to the International Panel on Climate Change, most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations. As we know, the United States is currently the greatest emitter of greenhouse gases.

While it is important to know what the long-term effects of global warming will be for our state and for the world, it is even more important to realize that we have an opportunity to avoid these consequences by making small changes now. By cutting our greenhouse gas emissions just 2% per year by 2050, we can protect our children and grandchildren from the worst effects of global warming.

Reducing greenhouse gas emissions by 2% per year is achievable and realistic. We have the technology to make this change. By eliminating waste, increasing efficiency, and investing in our own renewable energy sources, we can reduce our greenhouse gas emissions and keep jobs and money in Wisconsin.

We need you to pass the Wisconsin Safe Climate Act. This Act will cap greenhouse gas emissions at 1990 levels, and will require a gradual reduction to those levels by 2020. The Act will encourage investment in energy efficiency and the development of clean, renewable energy.

There are many that fear a reduction in greenhouse gas emissions will result in economic collapse for Wisconsin. However, studies show that Wisconsin actually stands to gain economically from making these changes. Investment in clean, renewable energy will create jobs in Wisconsin. One estimate indicates that investments in clean energy will create over 2,000 jobs in Wisconsin – 960 more than would be created with current energy technology.

Other economic benefits await our investment in clean energy. Wisconsin stands to gain 31 million dollars in new property tax revenues for local communities, 22 million dollars in lease payments to farmers and rural landowners from wind power and 35 million dollars in payments to rural communities from biomass energy production. In addition, Wisconsin residents will begin to see savings and stability in their energy bills as a result of a decreased dependence on out of state, fossil fuel-fired power plants.

In addition, cleaner air will help improve the health of Wisconsin residents by reducing the incidence of problems associated with poor air quality such as asthma.

Wisconsin needs to embrace 21st century technology and 21st century ideas. California has already passed this groundbreaking legislation. Other states are considering passing similar legislation. A similar bill has been introduced at the federal level. Change is on the horizon. Peter Darbee, chairman, chief executive and president of Pacific Gas and

Electric was recently asked why he broke ranks with his peers to support this legislation. He said:

> "Rather than sitting there and denying that global warming is a problem and climate change is a problem, my reaction was to accept it and to go with the flow to understand the trend, and then say, how can I position PG&E to deal with that challenge, and then how can I turn a challenge into an opportunity."

Wisconsin is faced with a challenge. We can bury our heads in the sand and pretend change is not coming. Or, we can turn this challenge into an opportunity while at the same time securing our children's future. We can reap the economic benefits of change and do the right thing for future generations.

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SUPPORT SB 81, the Wisconsin Safe Climate Act
Before the Senate Energy and Natural Resources Committee
By Caryl Terrell, SC-JMC Legislative Committee Chair
September 25, 2007

America needs a new energy policy that responds to the threat of global warming by investing in smart energy solutions. A bold shift from our current over reliance on dirty fossil fuels to a cleaner, more sustainable energy future will not only curb global warming and protect the environment, it will also lower energy bills, generate new economic opportunities and create good-paying jobs. In the absence of federal leadership, Wisconsin should adopt the Wisconsin Safe Climate Act, SB 81.

Continuing climate change would be detrimental to Wisconsin's native plants and animals, causing major alterations in both our agriculture and forestry and our winter tourism economy. Climate change and the smog caused by our reliance on fossil fuels are also linked to public health risks, including an increase in the spread of disease, childhood asthma and other heat related stresses and illnesses.

It is in the best interests of the state to adopt the Wisconsin Safe Climate Act and begin working on its achievable goals for reducing global temperatures. If Wisconsin takes the lead on global warming solutions, Wisconsin will be among the leaders in reaping the economic and community benefits.

SB 81 inventories the greenhouse gases (GHG) that are causing warmer temperatures. Today the only figures we have are from a voluntary registry or extrapolation from data collected by the federal government. Both are inadequate for answering the basic questions: what is the current level of GHG emissions and where are these gases generated. Every major air pollution and energy regulatory program begins with good science and a creditable database.

SB 81 authorizes DNR to identify measures for reducing GHG no later than January 1, 2011, before the full planning and rule-making process begins. SB 81 provides for stakeholder involvement and instructs DNR to include market-based compliance mechanisms. SB 81 is the first step. The legislature will be involved in shaping and approving these plans and rules.

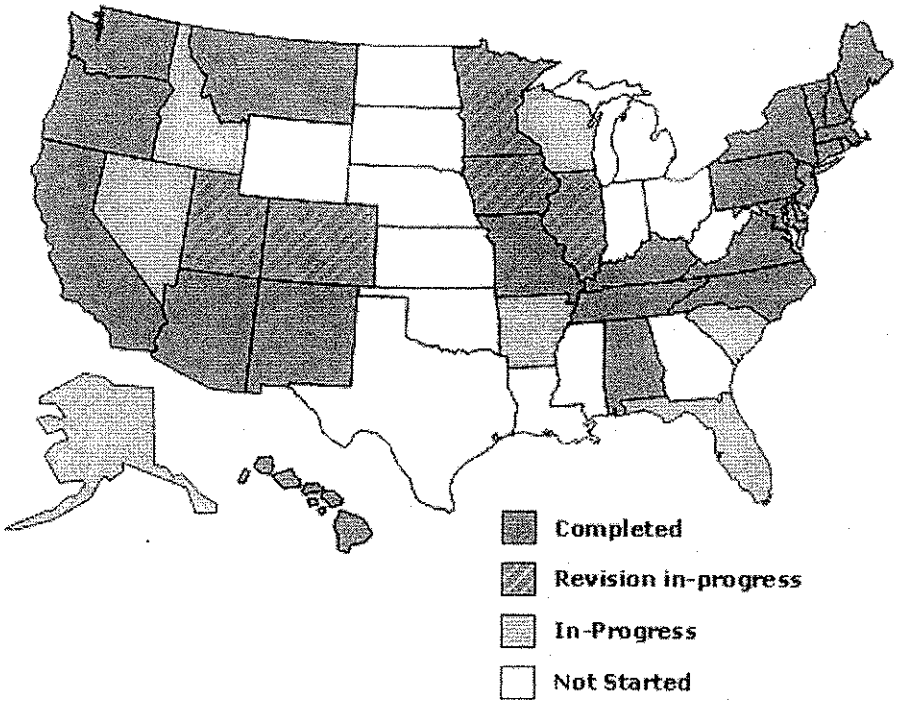
Wisconsin will not be going it alone. Other states, including our immediate neighbors, are developing climate action plans and legislative initiatives. Please see the attached and other maps by the Pew Center on Global Climate Change, http://www.pewclimate.org/what_s_being_done/in_the_states/action_plan_map.cfm

The Sierra Club and the American Solar Energy Society released a visionary energy policy that puts clean and efficient energy technology to work to reduce carbon dioxide emission by 80% by 2050, http://www.sierraclub.org/globalwarming/cleanenergy/solutions.asp. This very achievable 2% reduction per year is the focus of the Sierra Club's Global Warming and Energy Program. The Club supports legislation and administrative actions by governments at the national, state, regional multi-state and local levels. As the country's most effective grassroots organization, the Sierra Club engages its members in individual actions to reduce their ecological and GHG footprint. Our members are also active in community awareness and demonstration projects to make energy conservation and efficiency tangible to our neighbors and community leaders.

The Sierra Club is also proud to serve on the Governor's Global Warming Task Force and several of its Work Groups. We anticipate that the Task Force will provide many useful state recommendations to the Governor. The Governor's Task Force initiative is compatible with adopting SB 81.

We look forward to working with you to adopt SB 81. Thank you for this opportunity to testify.

States with Climate Action Plans



See the other maps
Read examples of climate action plan legislation

These states have completed comprehensive Climate Action Plans, which detail steps that the states can take to reduce their contribution to climate change. The process of developing a climate action plan can identify cost-effective opportunities to reduce GHG emissions that are relevant to the state. The individual characteristics of each state's economy, resource base, and political structure provide different opportunities for dealing with climate change. However, without targets for emissions reductions, incentives for cleaner technologies, or other clear policies, climate action plans will not achieve real reductions in GHG emissions.

AK: Climate Action Plan in progress, due in 2008

AL: "Policy Planning to Reduce Greenhouse Gas Emissions in Alabama," completed in 1997

AR: Climate Action Plan in progress, due November 2008

AZ: "Climate Change Action Plan," completed in 2006

CA: "Proposed Early Actions to Mitigate Climate Change in California," completed in 2007

CO: Climate Action Plan in progress, due end of 2007

CT: "Connecticut Climate Change Action Plan," completed in 2005

DE: "Deleware Climate Change Action Plan," completed in 2000

FL: Climate Action Plan in progress, due end of 2007

HI: "Hawaii Climate Change Action Plan," completed in 1998

IA: Climate Action Plan in progress, due January 2008

ID: Climate Action Plan in progress

IL: Climate Action Plan in progress, due July 2007

KY: "Climate Change Mitigation Strategies for Kentucky," completed in 1998

MA: "Massachusetts Climate Protection Plan," completed in 2004

MD: Climate Action Plan in progress, due April 2008

ME: "2004 Maine Climate Action Plan," completed in 2004

MN: "Minnesota Climate Mitigation Action Plan" in progress, due February 2008

MO: "Missouri Action Options for Reducing Greenhouse Gas Emissions," completed in 2002

MT: Climate Action Plan completed July 2007

NC: Climate Action Plan completed July 2007

NH: "The Climate Change Challenge," completed in 2001

NM: "New Mexico Climate Change Advisory Group Report," completed in 2006

NJ: Climate Action Plan in progress, due August 2007

NV: Climate Action Plan in progress, due May 2008

NY: "Recommendations to Governor Pataki for Reducing NY State Greenhouse Gas Emissions," completed in 2003

OR: "Oregon Strategy for Greenhouse Gas Reductions," completed in 2007

PA: "Climate Change Roadmap for Pennsylvania," completed in 2007

RI: "Rhode Island Greenhouse Gas Action Plan," completed in 2002

SC: "Climate, Energy and Commerce Action Plan" in progress, due May 2008

TN: "Tennessee Greenhouse Gas Emissions Mitigation Strategies," completed in 1999

UT: Climate Action Plan in progress, due Fall 2007

VA: "Virginia Energy Plan," completed in 2007

VT: Climate Action Plan in progress

WA: "Climate Action Plan," completed in 2005

WI: Climate Action Plan in progress, due December 2007

Members of the Senate Natural Resources Committee:

On behalf of Wisconsin Physicians for Social Responsibility, I'd like to encourage you to co-sponsor SB 81/AB157, the Safe Climate Act. As health care providers, our organization is acutely aware of the health consequences that global warming is having on the public. As we have observed, extreme weather causes deaths as direct results of the weather event and it can also contribute to deaths indirectly through an increased number of infectious diseases as was seen in Central America when Hurricane Mitch in 1998 caused soaring rates of malaria, dengue fever, and cholera. Heat stroke took the lives of tens of thousands in Europe in the summer of 2003 and in 1995, the heat wave in Chicago killed 750 people. We are seeing an increase of mosquito borne diseases like malaria, dengue fever, and encephalitis in areas that have never experienced these illnesses because of average global temperature increases. The scientific evidence is clear that the time to act on global warming is now and we need Wisconsin to be leaders in helping to reverse the direction of global warming. We urge your support of the Safe Climate Act bills in order to protect the health of our community.

Sincerely,

Amy Schulz, RN, BSN
President, Physicians for Social Responsibility Wisconsin

Members of the Senate Natural Resources Committee:

On behalf of Wisconsin Physicians for Social Responsibility, I'd like to encourage you to co-sponsor SB 81/AB152, the Safe Climate Act. As health care providers, our organization is acutely aware of the health consequences that global warming is having on the public. As we have observed, extreme weather events during the summer of the weather event and it can also contribute to deaths indirectly through increased number of infectious disease as was seen in Central America when Hurricane Mitch in 1998 caused soaring rates of malaria, dengue fever, and cholera. Heat stroke took the lives of hundreds in Europe in the summer of 2003 and in 1995, the heat wave in Chicago killed 750 people. We are seeing an increase of mosquito borne diseases like malaria, dengue fever, and encephalitis in areas that have never experienced these illnesses because of average global temperature increases. The scientific evidence is clear that the time to act on global warming is now and we need Wisconsin to be leaders in helping to reverse the direction of global warming. We urge your support of the Safe Climate Act bills in order to protect the health of our communities.

Sincerely,

Amy Schulz, DrPH, MSN
President, Physicians for Social Responsibility Wisconsin

Statement Prepared for The Senate Committee on Natural Resources
In Support of Senate Bill 81 - Wisconsin's Safe Climate Act
September 25th 2007

My name is Elizabeth Wessel and I live in Madison, WI. I am a parent of two teenagers; a member of a faith community that has passed a Statement of Conscience on global warming (Unitarian Universalists) that urges its community to action on this issue; and the owner of Green Concierge Travel, a travel agency dedicated to expanding ecotravel/ecotourism which considers the impact of travel, business or leisure, on destinations and the broader environment.

I support SB81 and the creation of Greenhouse gas reduction goals for the State Of Wisconsin. I have three areas I wish to address today as we move towards the adoption of a state policy. I:

- Support the creation, inclusion and empowerment of a *greenhouse gas environmental justice council* in s.15.347(5) of the SB81. The creation of such a council provides a mechanism to account for the disproportionate impacts of both the environmental and health impacts of greenhouse gases but ALSO the impacts of the solutions that we devise to reduce and eliminate the emission of these gases. As we rush to solutions, it is imperative that we consider the implications of our actions. Toward this end, I urge the authors of the bill to consider adding language that ensures the members of this council are selected from communities that not only "have the most significant exposure to air pollutants" as stated in the bill, but also those who stand to have difficulties in meeting the challenges of solutions because of income or those that may be impacted by new environmental hazards generated by solutions to global warming. We should not assume these populations are the same.

- Support the involvement of other state agencies in both addressing how each agency's activities contribute to global warming but also how each agency can be part of the solution. I respectively suggest to the authors of this bill and the Committee that this task needs to be proactively assigned to agencies to report to the Department of Natural Resources so it is not the DNR's burden to tease the information from the agencies.

Further, I believe this task belongs to all agencies and not just those "with jurisdiction over greenhouse gas emission sources" as stated in S 286.20(1) of the bill. I would argue strongly that agencies such as the Department of Development, the Department of Tourism, and the Department of Transportation have a role. Their policies, decisions, and spending/investment patterns can affect greenhouse gas emissions in the State of Wisconsin. They need to be assigned the tasks of (1) review of their own policies and actions and (2) finding ways to reduce greenhouse gas emissions. State government as a

whole must be pulling in one direction on this issue or we will be undercutting the efforts of one sector by another.

- Support the direct inclusion of agencies like the Department of Tourism and Department of Transportation because of their role in the travel industry. Tomorrow, the second North American Ecotourism conference will be convened by The International Ecotourism Society here in Madison. While the history of ecotourism has been more concerned with the protection and preservation of local natural treasures and economies, the industry has begun the discussion of its role in exacerbating global warming.

On Friday an extended session will be held "Climate Change and the Tourism Industry: A North American Stakeholder Meeting". As part of this, a draft document "Sustainable Transportation Guidelines for nature-based Tour Operators"[1] has been issued. This paper emphasizes tourism's contribution to global warming and ways how this impact can be reduced or mitigated. Transportation is the number one concern for my business and for the emerging ecotravel industry as they relate to global warming.

We need to plan, design and build a future state of Wisconsin with citizens and visitors in mind. There needs to be more rail access – regional, intercity and intracity. Urban public transit systems need to connect to regional and national systems. This investment in infrastructure needs to be accompanied by an equally strong commitment to Smart Growth and the implementation of land use plans. More reasons to look beyond agencies that have jurisdiction over greenhouse gas emission sources.

Many people in Wisconsin are committed to reducing global warming emissions. People here today are committed. Many of them have taken individual pledges and action to change their behavior to reduce their carbon footprint. I have made a commitment to only live where I can access public transportation. About 60 members of First Unitarian Society have pledged to increase their use of compact fluorescents, drive less, walk and bike more, eat local food, change to energy efficient appliances and install solar electric systems. Momentum exists to create the changes we need.

What we need now is the leadership to leverage this support. It will take leadership from you on this Committee, from the Governor and businesses to make our statewide goals. Let's not be complacent; let's achieve reductions so that Wisconsin's per capita CO_2 equivalent is below the national average not equal to it.

Thank you for holding this hearing and thank you for taking action to reduce Wisconsin's carbon footprint now.

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[1] Stradas, Wolfgang, Stanford/Eberswalde, May 30, 2007, Sustainable Transportation Guidelines for Nature-based Tour Operators",

REPRESENTING WISCONSIN BUSINESS

Wisconsin Manufacturers & Commerce

Wisconsin Manufacturers' Association • 1911
Wisconsin Council of Safety • 1923
Wisconsin State Chamber of Commerce • 1929

James S. Haney
President

James A. Buchen
Vice President
Government Relations

James R. Morgan
Vice President
Marketing & Membership

Michael R. Shoys
Vice President
Administration

TO: Senate Committee on Environment & Natural Resources

FROM: Scott Manley, Environmental Policy Director

DATE: September 25, 2007

RE: Senate Bill 81 – Greenhouse Gas Regulation

Wisconsin Manufacturers & Commerce (WMC) is opposed to the approach taken in Senate Bill 81 to achieve reductions in greenhouse gas (GHG) emissions, and respectfully requests that members of the Senate Committee on Environment & Natural Resources oppose this bill.

WMC is the state's largest business trade association, with over 4,000 members in the manufacturing, service, health care, retail, energy and insurance sectors of our economy. WMC is dedicated to making Wisconsin the most competitive state to do business in the nation, and toward that goal, we support consistent, cost-effective and market-driven regulatory approaches that recognize a balance between environmental protection and the competitiveness Wisconsin's jobs and economy.

Before discussing the specifics of Senate Bill 81, it is important to place into perspective the significance of manufacturing to Wisconsin's overall economy. There are more than 500,000 workers in Wisconsin's manufacturing sector, and more than 10,000 manufacturing businesses statewide. These jobs, which include both union and non-union workers, pay among the highest wages in our workforce, with salaries averaging over $44,000 per year.

Manufacturing is a critical component of our economy, and accounts for more than $44 billion in economic output each year -- nearly one-fourth of all goods and services in our state. In 2005 alone, Wisconsin manufacturers exported more than $14 billion in goods to other countries. Hundreds of thousands of Wisconsin families depend either directly or indirectly on a healthy manufacturing sector for their livelihood.

For these reasons, it is critically important that policymakers, however well-intended, avoid adopting laws that threaten the economic health and competitiveness of manufacturing in Wisconsin. WMC is concerned that Senate Bill 81 would lead to that unintended result if it became law in our state.

There is significant risk associated with implementing broad-based GHG emission mandates in Wisconsin without an economy-wide federal regulation in place. Forcing a costly state-only regulatory burden on Wisconsin businesses would create an un-level playing field and place

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our industries at a competitive disadvantage relative to companies in other states that do not face similar costs.

Equally important to a level national playing field is the need for a level international playing field. Our country's trade imbalance with China exceeded $260 billion last year, and has increased 15% already this year. At the same time, China has become the number one emitter of carbon emissions, and is adding a new coal-fired power plant every week. Placing costly and stringent regulations on Wisconsin companies in the absence of addressing Chinese emissions will only exacerbate our trade imbalance, and weaken our manufacturers' position in the global economy. The federal government, rather than state government, has an opportunity to ensure the involvement of each of the United States' trading partners, including China. For this reason, mandatory regulation should only occur at the federal level of government.

Unfortunately, Senate Bill 81 proposes the type of harmful mandatory regulations that Wisconsin should seek to avoid. Indeed, the bill would target manufacturers for a "double hit," whereby employers would be subject to both direct and indirect regulatory costs. That is, manufacturers would face direct costs associated with regulation of their own GHG emissions, but perhaps more significantly, would face substantial indirect cost increases through higher electric rates resulting from regulation of GHG emissions at electric utilities. For most companies, these higher costs simply cannot be passed along to customers in the form of higher prices for goods. Intense competition has created increasingly slim margins between success and failure in today's national and international marketplace. Wisconsin companies therefore cannot remain viable if they are forced to bear these costs.

The adverse impact of higher electric rates resulting from state-only GHG regulations on utilities cannot be overstated. Despite significant efforts by industry to conserve energy and implement conservation measures, electricity continues to be a significant portion of manufacturing production costs. Indeed, industry is the largest consumer of electric generation in Wisconsin, surpassing both residential and commercial users with roughly 38% of all electricity use.

The very nature of electric generation in Wisconsin is itself an important factor in any policy discussion of GHG emissions. Wisconsin utilizes significant levels of coal as an abundant and inexpensive means to generate electricity. Roughly 70% of all electric generation in Wisconsin comes from coal. By contrast, the State of California generates only 1% of their electricity from coal. This fact helps underscore why legislation like Senate Bill 81, which is patterned after what was deemed to be good policy for California, is not necessarily the right policy for Wisconsin.

Senate Bill 81 would require the Department of Natural Resources (DNR) to establish GHG emission baselines for the year 1990, and correspondingly, grants DNR broad authority to establish regulations to reduce Wisconsin GHG emissions to 1990 baseline levels by the year 2020. The bill requires these reductions to be quantifiable and verifiable.

As a practical matter, WMC believes Senate Bill 81 gives DNR the authority to regulate only stationary emission sources such as manufacturers and electric utilities. The bill does not appear to contemplate regulating the transportation, residential, commercial or agricultural sectors of our economy, which together account for roughly half of all GHG emissions. In this regard, Senate Bill 81 places an unfair and disproportionate regulatory burden on Wisconsin businesses and electric ratepayers.

Although the bill appears to specifically target manufacturers for mandatory emission reductions, it should be noted that direct industrial emissions account for only 13% of all GHG emissions in Wisconsin. Even if policymakers were willing to risk significant job loss resulting from stringent state-only industrial GHG emission regulations, the overall benefit of those reductions would necessarily be limited to a fraction of 13%.

According to recent data, Wisconsin industrial GHG emissions have declined 20% since 2000, and roughly 10% since 1997. Also relevant is the fact that GHG emissions from the transportation and commercial sectors grew nearly twice as fast as that of the industrial sector between 1990 and 2003 – yet Senate Bill 81 does not appear to regulate those emission sectors.

Although WMC believes Senate Bill 81 is the wrong approach in terms of meeting GHG emission targets, there is certainly a role for industry in reducing carbon emissions. As noted above, industry is the largest consumer of electricity, so energy efficiency and conservation measures undertaken by industry represent a significant opportunity to reduce Wisconsin's fossil fuel fired electric generation footprint.

Manufacturers have already taken important steps toward energy efficiency. During the 1990s, U.S. industry decreased its emission of greenhouse gases per unit of output at twice the rate of the rest of the economy. Today, the U.S. economy uses 46 percent less energy to produce each dollar of GDP than it used in the early 1970s. Manufacturers will continue to find ways to be more energy efficient, which reduces fuel use and CO2 emissions. However, in order to meet reductions targets, we need government to be a partner rather than a barrier.

Through voluntary and incentive-based programs, government can help industry meet GHG reduction targets by building upon existing energy efficiency initiatives. We have some of the most creative and successful companies in the world within our borders, and Wisconsin is therefore in a unique position to become a world leader in the research and development of cutting-edge technology to reduce carbon emissions. However, costly and stringent state-only regulations will work against a solution. Wisconsin manufacturers will have a difficult time meeting the challenge if we have one hand tied behind our backs with regulation that works against our competitiveness.

In conclusion, industry is prepared to undertake cost-effective, market-based and voluntary measures to reduce GHG emissions through energy efficiency and conservation. In this regard, WMC believes state government can play an important role by providing economic incentives and fostering a climate where innovation will succeed. To the extent that mandatory regulation is deemed necessary, the regulation must occur at the federal level of government to ensure a level playing field among competing states and nations. By contrast, stringent state-only regulations like those proposed in Senate Bill 81 will damage a critical component of Wisconsin's economy, resulting in significant job loss and economic dislocation. For these reasons, WMC urges Committee Members to oppose passage of Senate Bill 81.

Thank you for your thoughtful consideration of industry's position with respect to climate change legislation. Please feel free to contact me if you have any questions, or if I can provide you with additional information, at (608) 258-3400 or smanley@wmc.org.

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To: **Senate Committee on Environment and Natural Resources**

Re: **Testimony in support of the Wisconsin Safe Climate Act (SB81)**

From: **Dan Kohler - Director, Wisconsin Environment**

Date: **September 25, 2007**

My name is Dan Kohler. I am the director of Wisconsin Environment. On behalf of our nearly 10,000 members, I want to thank the Senate Natural Resources Committee for accepting testimony from Wisconsin Environment in support of the Wisconsin Safe Climate Act.

By adopting the Wisconsin Safe Climate Act, Wisconsin can join other states in taking decisive action to address the problem of global warming, protect Wisconsin's natural resources and move Wisconsin toward being more secure by using more homegrown, clean renewable energy.

Wisconsin Environment recently released a report assessing global warming impacts in Wisconsin.

Among our findings:

First: Wisconsin's climate is already changing

• In Wisconsin, average temperatures increased by 0.7° F during the 20th century, extreme rainfall events have become more common, the duration of ice cover on Wisconsin lakes has declined, and springtime events—such as the blooming of plants and the return of migratory birds—are happening earlier in the year. As a result, we are and can expect to continue to see impacts to our farms, forests, waterways and recreation.

Second: Wisconsin is a significant contributor to global warming.

• Emissions of carbon dioxide—the leading greenhouse gas—increased by 25 percent in the state between 1990 and 2004. Were Wisconsin its own country, it would rank 38th in the world for carbon dioxide emissions, ahead of such nations as Romania, Austria, Sweden and Israel.

To prevent the worst impacts of global warming, Wisconsin, the United States and the world must act. There is broad scientific consensus that we must work to stabilize global warming emissions at or below today's levels by the end of the decade, reduce emissions by at least 15 to 20 percent by 2020, and reduce emissions by at least 80 percent by 2050.

California, New Jersey, Hawaii and our neighbors in Minnesota have all acted in a bi-partisan way to adopt legislation to reduce global warming emissions. A number of other New England and Western states have formed regional agreements.

It is time for Wisconsin to act. We know global warming threatens the natural character and cultural identity of our state. Fortunately, we have all the tools necessary to address global warming. And, Wisconsin has the technical know-how and natural advantages to be able to address the problem and benefit by using more wind, solar, bio-fuels, as well as maximizing our energy efficiency.

There is no more profound a problem we face than global warming. It is critical the legislature act to ensure Wisconsin reduces global warming emissions in line with levels scientists recommend to avoid the worst impacts of the problem.

On behalf of Wisconsin Environment, I strongly encourage the Senate Committee on Environment and Natural Resources to vote to recommend passage of the Wisconsin Safe Climate Act.

Thank you.

To: Senate Environment and Natural Resources

From: Scott Wiseman, Vice-President Midwest Region
Center for Energy and Economic Development (CEED),

Date: September 25, 2007

RE: SB 81, Management of Greenhouse Gases

CEED would like to thank the committee for this opportunity to provide background information on this important issue. Generally, we have reservations over state programs that impose emission limitations on greenhouse gases, and thus oppose SB 81 in its current form. To the extent committee members may evaluate this legislation in light of initiatives in other states; we have attached an informative piece on such programs recently produced by the American Council for Capital Formation.

CEED's membership includes many of the nation's major coal-burning utilities, coal-hauling railroads, coal companies, barge and trucking companies, and manufacturers that supply these industries. In addition to this broad industry coalition, the United Mine Workers, the United Transportation Union and Unions for Jobs and the Environment are non dues paying members.

Global climate change has been a central issue in CEED's advocacy efforts. Climate change policy cannot be separated from broader energy security, economic development, and environmental policies. Policies to achieve the goal of reducing or avoiding greenhouse gas emissions manifest themselves at a time when electricity demand in the U.S. continues to mount.

Nationwide, the ability to provide a reliable supply of electricity is becoming an increasingly difficult challenge, according to the National Electricity Reliability Council (NERC). NERC projects that the available installed capacity margin will decline nationally from approximately 18% in 2005 to about 7% in 2015. For general reliability planning purposes, NERC recommends a national reserve margin of 11% and a 15% reserve margin in the Midwest Region to ensure a safe and stable supply of electricity.

Even under NERC's base-case scenario (that assumes no mandatory greenhouse gas regulations), some regions of the country will slip under the desired safe reserve margins within the next few years. Clearly, regulation of utility greenhouse gas emissions will further exacerbate this situation.

According to forecasts by the U.S. Energy Information Agency (EIA) and others, some of the most severe federal greenhouse gas emissions mandates would reduce electricity supply by 7% in 2020 and by 8% in 2025. Rigorous, immediate GHG reductions caused by state regulation, outside of a more complete federal regime would bring about similar electric grid constraints.

Having an abundant supply of affordable electricity promotes economic growth in Wisconsin. Lower energy costs translate into stronger state economic development. According to a March 2006 study by Management Information Services, Inc., from 2000 to 2005, the ten states with lower business energy costs enjoyed 60% higher average employment growth compared to the ten states with the highest energy costs. Further, four of the ten states with the highest business energy costs experienced net job losses over the same period.

A report in the April 4, 2007 *Washington Post* illustrates how catastrophic a "state-only" regulatory regime can be harmful to the economy: "...Europe's Greenhouse Gas reduction program has driven electricity prices so high that (a manufacturing) facility routinely shuts down for part of the day to save money on power. Although demand for its products is strong, the plant has laid off 40 of its 130 employees and trimmed production. Two customers have turned to cheaper imports from China, which is not covered by Europe's costly regulations."

The cost of electricity not only promotes economic development, but also profoundly affects the lives of thousands of Wisconsin' most vulnerable citizens. For those living on low or fixed-incomes, energy costs consume 20% to 46% of total household income.

Several Major News Outlets reported last week that the *Congressional Budget Office* says a CO2 cap-and-trade program would drive up consumer energy prices and would hit low-income households the hardest. The report says "the costs of meeting a cap on CO2 would be borne by consumers, who would face persistently higher prices for products such as electricity and gasoline." Those increased costs would be "regressive" because the poor "would bear a larger burden relative to their income," according to the report. Given the demonstrated linkage between household income and health, surges in energy costs can be expected to damage the quality of life of the one-in-three American households with an annual income of $30,000 or less.

The publication *Carbon Control News* recently reported that a group called "The U.S. Climate Action Network (USCAN), which includes environmental justice groups as well as mainstream environmental organizations like the National Resources Defense Council (NRDC), is also urging consideration of equity issues as part of climate change legislation, according to a March 19 letter by the group to House Energy & Commerce Committee Chairman John Dingell (D-MI), who is seeking input on drafting the nation's first mandatory greenhouse gas (GHG) controls. 'Global warming legislation must mitigate against any disproportionate impacts on low income and vulnerable communities,' the USCAN letter says."

How Wisconsin handles dealing with climate change issues have implications on how it copes with electricity rates, energy supply and economic development. Other states and Congress have undergone or are undergoing similar exercises presently or in the last few years.

Governor Doyle and the Governors of Iowa, Illinois and Minnesota have convened special climate panels to receive input from every effected stakeholder and recommend various courses of action. Contradictory to the Midwestern states, the California legislature, last year, without significant stakeholder input, passed a bill calling for the state to reduce its greenhouse gas emissions to 1990 levels by 2020. California state agencies are now trying to figure out how to meet this target, given the state's huge economy and rapid population growth rate. Apparently that state's experience with a deregulated electricity market a few years ago failed to serve as a sufficient example of what can happen when laws are made without input from the a broad array of interested and knowledgeable participants.

New England and other northeastern states convened a stakeholder process in 2004 to develop a regional plan for reducing carbon emissions from electric utilities. Initial proposals required reductions of up to 25% below 1990 emission levels. After three years' of study and debate, the Northeastern states agreed to freeze utility emissions at current levels for the next 10 years, and then to require a 10% reduction by 2019.

On March 20, 2007, the *Environmental Council of States*, or "ECOS," a national association of the heads of all state environmental agencies, adopted a resolution that "...urges Congress and (U.S.) EPA to work closely with ECOS and the states to expeditiously adopt a national program to reduce GHG emissions in this country in a cost-effective, coordinated, and streamlined manner that enhances the nation's competitiveness in a worldwide economy, ensures a safe, secure, predictable and reliable energy future and builds upon state GHG reduction programs..."

Finally, the promising part of the discussion of how to address global climate issues lies in the development of future technologies that promise to greatly reduce or even eliminate coal's contribution to global warming. These technologies, such as sequestering carbon dioxide underground, need time to fully mature and become cost-effective. Meanwhile, policymakers must consider these emerging trends as they discuss balanced actions and responsible measures.

Citizens of the State of Wisconsin or relying upon its elected officials to balance the needs of its most vulnerable citizens and the need for a thriving economy with the need to address the climate change issue. Congressional action is the most preferable forum for this national, and indeed, global concern. Please carefully consider any actions the State of Wisconsin may take on this matter in light of the discussion on Capitol Hill and in light of many of the factors outlined here.

Thank you for your consideration.

Scott Wiseman is the Vice President for the Midwest Region for the Center for Energy and Economic Development or CEED. CEED's mission is to educate decision makers and contribute toward the development of energy and environmental policies, primarily at the regional, state and local levels.

As Regional Vice President, Mr. Wiseman is engaged in eleven Midwestern states on issues that have the most profound effect on the coal-based electricity industry's viability. Mr. Wiseman has had industry leadership roles on issues such as energy policy, multi-emissions proposals, climate change, mercury, New Source Review and regional haze.

CEED was formed in 1992. Wiseman joined CEED in August 2005, after serving in several capacities in Illinois state government, most recently as the Executive Director of the Illinois Commerce Commission and Chief of Staff of the Illinois Department of Revenue.

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A Reality Check on Initiatives to Reduce Greenhouse Gas Emissions in California, Oregon, the Northeast and in Europe

by
Margo Thorning, Ph.D.
Senior Vice President and Chief Economist
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August 2007

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Executive Summary

Several U.S. states and the European Union have adopted caps on greenhouse gas emissions (GHGs) designed to reduce greenhouse gas emissions by curbing energy use, encouraging the use of renewables and increasing energy efficiency. California has enacted a series of bills to reduce GHGs, including Assembly Bill 32 which requires that emissions be cut to 1990 levels by 2020. Given the state's own projections of growth in population and in baseline GHG emissions, the reduction targets can only be achieved through significant reductions in economic growth and employment. Ten northeastern states formed the Regional Greenhouse Gas Initiative ("RGGI") to reduce carbon dioxide (CO_2) emissions from electric utilities. The evidence suggests that RGGI may be a "paper tiger" because RGGI's initial cap of 121.3 million short tons of carbon dioxide may be higher than actual emissions when the cap applies in 2009. In addition, reports that Portland, Oregon reduced GHG emissions to 10 percent below 1990 levels in 2004 are based on questionable data and one time events like changing landfills and to a slowing economy.

The European Union's mandatory emission trading system (ETS) has not been successful in slowing the growth of GHGs in the EU-15 (the original members like France, Spain, Germany, UK, and Italy). The United States on the other hand, with its voluntary approach, has made steady progress in reducing the amount of energy required to produce a dollar of output. In fact, the U.S. reduced its absolute level of CO_2 emissions by 1.3 percent in 2006 while its economy grew by 3.3 percent.

Climate change policies should continue to strive to reduce energy intensity as the capital stock is replaced over the business cycle, promoting the development of new, cost-effective technologies for alternative energy production and conservation while encouraging the spread of market based reforms in the developing world. This approach is likely to be much more productive than adopting mandatory CO_2 reduction targets that would sacrifice economic well-being and job growth with little or no long-term impact on global GHG emission growth.

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* The mission of the American Council for Capital Formation is to promote economic growth through sound tax, environmental and trade policies. For more information about the Council , please contact the ACCF, 1750 K Street, N.W., Suite 400, Washington, D.C. 20006-2302; telephone: 202.293.5811; fax: 202.785.8165; e-mail: info@accf.org; website: www.accf.org. This project was made possible, in part, by a grant from the Center for Energy and Economic Development.

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by
Margo Thorning, Ph.D.*
Senior Vice President and Chief Economist
American Council for Capital Formation

August 2007

Introduction

Reducing the growth of greenhouse gas emissions (GHGs) is an important environmental policy goal intended to reduce the threat of human-induced climate change. Several U.S. states and the European Union have adopted mandatory caps on GHG emissions designed to reduce greenhouse gas emissions by curbing energy use, encouraging the use of renewables and increasing energy efficiency. This paper provides an overview of what impact current policies in California, Oregon, the Northeastern states and Europe are having on GHG emissions growth. It also examines the potential economic consequences when such policies are implemented. In addition, the paper describes emission trends in the United States and outlines cost-effective policies that can have a substantial impact on slowing global emission growth.

1. California's Greenhouse Gas Emissions: Myths and Reality

In August 2006, the California Legislature enacted a bill requiring the state to sharply reduce its greenhouse gas emissions. Assembly Bill (AB) 32 requires that California reduce its statewide GHG emissions to 1990 levels by 2020. Reductions are scheduled to begin in 2012. The law requires that utilities account for and include the carbon emissions of electricity imported into the State. California law already requires that 20 percent of electricity be produced from renewables by 2017. Achieving AB 32's emission targets will present a difficult challenge for Californians, given current emission trends and population growth.

Economic Analyses of the Impact of AB 32

The California Climate Action Team (CAT) report of March 2006 analyzed the GHG reduction targets adopted in AB 32 (reducing emissions to 1990 emission levels by 2020). While the CAT report stated in its analysis that "command and control" policies to reduce GHGs in California will increase state net income and create new jobs, other analyses suggest the opposite will prove to be the case. Several recent credible analyses conclude that AB 32 is likely to cause net job loss

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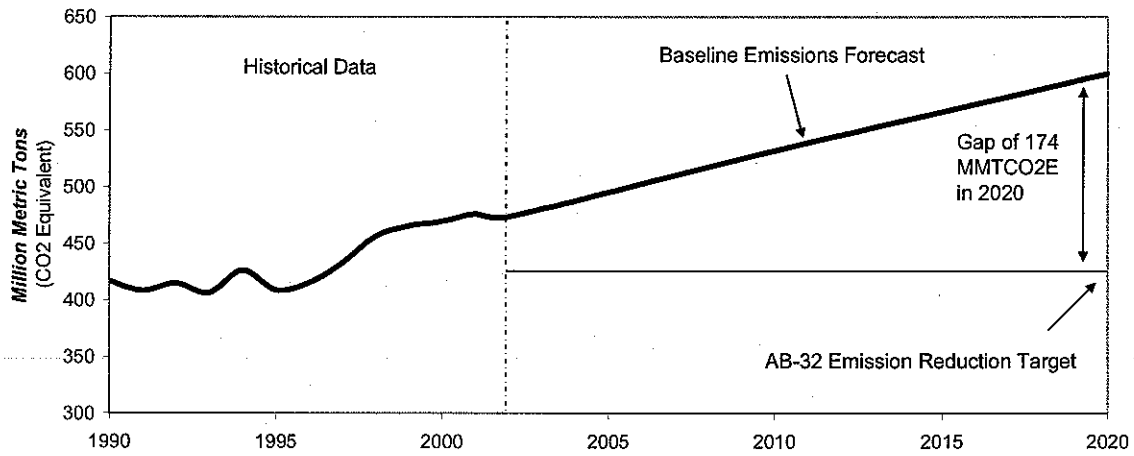
and "leakage" of industry to states and countries which do not have mandatory emission caps, and result in no net GHG reduction.

- **California's Projected Growth in Emissions and Population: Effect on Achievement of AB 32 Targets**

  A major stumbling block to California's meeting the AB 32 targets is its projected increases in emissions and population over the next fourteen years. California's GHG emissions are projected to grow 27 percent between 2000 and 2020 under the baseline forecast, according to estimates in the CAT report. The baseline forecast already includes assumptions about increased energy efficiency. Even so, California's GHG emissions are projected to rise to 600 million metric tons of carbon dioxide ($MMTCO_2$) by 2020, compared to AB 32's required reduction to 426 $MMTCO_2$ **(see Figure 1).**

  The most recent data available from the U.S. Department of Energy's Energy Information Administration indicates California's CO_2 emissions rose by 2 percent from 2002 to 2003. Sharp cutbacks in California's energy use will be necessary to close the 41 percent gap (174/$MMTCO_2$) in 2020 between projected emissions and the AB 32 target. Further complicating California's challenge is projected increase in population from 30 million residents in 1990 to 37 million residents in 2004 and 44 million in 2020. More people means more energy needed to heat and cool homes, fuel job growth and provide transportation.

Figure 1. California Carbon Dioxide Emissions
(Million Metric Tons CO2 Equivalent)



Sources: ***Historical Data*** : Gerry Bemis and Jennifer Allen, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update", June 2005.

Baseline Emissions Forecast: Baseline forecast includes the California Energy Commission's projections of anticipated energy efficiency improvements. Source for 2010 and 2020 forecasts is California Environmental Protection Agency, "Climate Action Team Report to Governor Schwarzenegger and the Legislature", March 2006, pg 64.

To illustrate the difficulty of reducing California's emissions to 1990 levels by 2020, consider that over the entire 1990-2000 period, per capita emissions in California fell by only 2.9 percent **(see Table 1 and Figure 2)**. California's projections show that, under its baseline forecast, emissions per capita will decline by 2.3 percent from 2000 to 2010 but will **increase** by 0.9 percent from 2010 to 2020 **(see Table 1).**

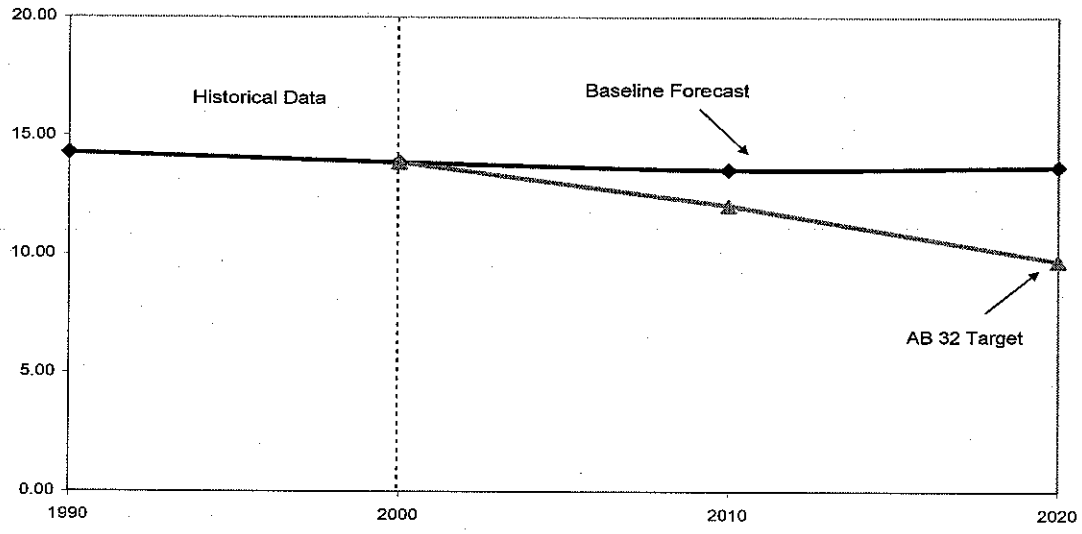
In order to meet the emission reduction target in AB 32, per capita emissions would have to fall by 13.1 percent over the 2000-2010 period and an additional 19.4 percent from 2010 to 2020 **(see Table 1)**. In other words, the required reductions in per capita emissions are 4.5 to 6.5 times greater than what occurred from 1990 to 2000. The technologies simply do not exist to reduce total (and per capita emissions) over the next 14 years by the amounts mandated in AB 32—to say nothing of the time and expense required to replace existing energy using equipment—without severely reducing growth in California's Gross State Product (GSP) and employment.

Table 1. California's Per Capita Emissions Under Baseline Forecast and Decrease Required for AB 32 Target

Year	Emissions (MMTCO2E)	Population (Millions)	Per Capita Emissions	Percentage Change	AB 32 Emissions Target (MMTCO2E)	Required Per Capita Emissions	Percentage Change
1990	426	29.83	14.28				
2000	473	34.10	13.87	-2.9%	473	13.87	
2010	532	39.25	13.56	-2.3%	473*	12.05	-13.1%
2020	600	43.85	13.68	0.9%	426	9.71	-19.4%
			2000-2020	-1.4%			-30%

Source: CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006. Table 5-5 Baseline Inventory Estimates (pg 64). * Note that while AB 32 does not contain an emission reduction target for 2010, the CAT report does.

Figure 2. Emissions Per Capita
(Metric Tons CO2 Equivalent per Person)



Source: CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006. Table 5-5 Baseline Inventory Estimates (pg 64)

- **Electric Power Research Institute**

A new macroeconomic analysis by the Electric Power Research Institute (June, 2007) analyzes six possible policy scenarios for implementing AB 32 (see report at http://www.epriweb.com/public/000000000001014641.pdf). The EPRI report concludes that while all six scenarios impose costs on California's economy, the policies differ in their cost per ton of GHG emissions avoided. The scenarios that significantly reduce GHGs entail costs to the California economy ranging from $100 to $511 billion through 2050. In addition, for every ton of CO_2 emission reduction in California, there could be an increase of 0.85 tons of electric sector emissions from the rest of the western states (the essence of the "leakage issue") due to "contract shuffling." EPRI's findings are in sharp contrast with those of the CAT report mentioned above.

- **AEI-Brookings Joint Center Report**

Another recent examination of the likely consequences of AB 32 was released by the AEI-Brookings Joint Center for Regulatory Studies in January, 2007 (see http://www.aei.brookings.org/admin/authorpdfs/page.php?id=1358). AEI-Brookings concludes that studies by the Climate Action Team, the Center for Clean Air Policy and by David Roland-Holst who is a professor at Mills College and is also an adjunct professor at the University of California at Berkeley (hereafter the California studies) substantially underestimate the cost of meeting the 2020 target. According to the report, the major flaws of the California analyses include: a) ignoring costs of energy investments to households and business, b.) inaccurate estimates of future saving from reduced energy use, c.) incorrect choice of discount rate to value energy saving, d.) underestimation of costs of policies to reduce emissions, and e.) incorrect estimates of consumer baseline behavior. As a result, the annual costs of AB 32 are understated by billions of dollars. Thus, the California studies do not offer reliable estimates of the cost to Californians of meeting the AB 32 target.

In summary, the costs of AB 32 are likely to be quite high and the benefits quite small. California's emissions were only about 2.5 percent of total global emissions in 2002 and will continue to shrink as a share of total global emissions. But more important, the most recent data indicate that California's emissions are trending upward, not down.

2. The Regional Greenhouse Gas Initiative: Myths and Reality

Ten northeastern states[1] formed the Regional Greenhouse Gas Initiative ("RGGI") in 2004, with the intention of reducing electric utility carbon dioxide emissions. In December 2005, the RGGI states agreed to a Memorandum of Understanding (MOU) limiting utility CO_2 emissions to "current" emission levels. From 2009 to 2014, the cap will be 121 million metric tons of CO_2, followed by a 10 percent reduction to be phased in between 2015 and 2018. Individual RGGI states now are pursuing state legislative and regulatory authority to implement Model Rules required to implement a CO_2 cap-and-trade program under the RGGI agreement.

[1] ME, NH, VT, CT, MA, RI, NY, NJ, DE and MD. Maryland joined RGGI in 2007 as a result of adoption of the Maryland Healthy Air Act in 2006. Pennsylvania served as an observer of the RGGI process, but did not join the RGGI MOU.

Utility CO_2 emissions represent about one-third of total greenhouse gas emissions in the RGGI states. While the RGGI agreement will cap CO_2 emissions from the utility sector, greenhouse gas emissions from transportation and other sectors are projected to increase. Overall, greenhouse gas emissions in the northeast RGGI region will grow, even when the RGGI program is fully operational.

The RGGI region is likely to import substantially greater amounts of power from coal-fueled sources located to their west and south. Several new power transmission projects have been designed to improve electric reliability in the northeast. States such as Connecticut, New Jersey and New York already are confronting serious power supply deficiencies due to the lack of new electric generating capacity construction.

State regulatory analysts estimate that a 3 percent increase in imported power to the RGGI area is sufficient to offset all of the CO_2 reductions projected for the RGGI program (by increasing emissions in neighboring states). The transmission projects now on the drawing board are capable of delivering tens of thousands of megawatts of power to reduce transmission congestion and to improve reliability in the northeast.

However, in March 2007, the RGGI "Imports and Leakage Committee" issued recommendations for studying the emissions impacts of increased power imports from other states and offered several proposals designed to minimize increased carbon emissions associated with such imports. The recommended state regulatory initiatives to tax or otherwise impede increased power imports, by requiring emission "offsets" for example, are suspect on constitutional grounds.

Evidence that RGGI's proposal actually lacks "teeth" is provided by a recent Congressional Research Service report, "Greenhouse Gas Reductions: California Action and the Regional Greenhouse Gas Initiative" (April 2007). CRS reports RGGI's initial cap of 121.3 million short tons of carbon dioxide may be higher than actual emissions when the cap occurs in 2009. Private estimates using data from the U.S. Department of Energy's Energy Information Administration (DOE/EIA) also suggest that most states will not face actual reductions until the middle of the next decade. If that proves to be the case, no GHG reductions will actually be necessary. Thus the vaunted RGGI program may be a "paper tiger" at least until the middle of the next decade.

3. Portland, Oregon: Emissions Myths and Realities

An analysis published in ClimateBiz by Dr. Mark C. Trexler, a noted climate expert with the World Resources Institute, questions whether the city of Portland, Oregon actually has achieved the emission reductions it reported in 2005 (see http://www.climatebiz.com/sections/news_detail.cfm?NewsID=28497). Portland was the first U.S. city (in 1993) to adopt a plan to reduce greenhouse gas emissions. In 2001, Oregon's Multnomah County (within which Portland sits) joined Portland in adopting a county-wide target of reducing GHG emissions by 10 percent below 1990 levels by 2010.

In 2005, Portland and Multnomah County released their *2005 Global Warming Progress Report*. It announced that 2004 emissions already had dipped below 1990 levels. The drop below 1990

emissions admittedly was only 0.1 percent — but it still is a far cry from the seemingly inexorable upward march of emissions across the nation, Dr. Trexler notes. However, in reviewing the numbers after the report's release, the authors discovered a mathematical error that when corrected showed aggregate emissions in 2004 to be above 1990 levels, albeit only marginally so.

Dr. Trexler believes there are several reasons to question Portland's reported emission cuts. First, the estimates are based on high-level approximations. For electricity, for example, aggregate utility estimates of the number of megawatt hours sold to residential, commercial, and industrial users were multiplied by the regional average CO_2 emissions factor. For the transportation sector, emissions were calculated based on fuel sales within Multnomah County rather than any estimate of vehicle miles traveled (VMTs) or any other measure.

Thus, due to the highly aggregated data, it's not easy to discern the real trends. Are VMTs really decreasing (which would be in marked contrast to national trends) or are relatively more people buying gasoline outside the city and county limits into which they commute? Is decreased electricity use being driven by energy conservation measures or by Oregon's economic woes over the last several years?

Overall, Portland's results for 2004 seem particularly affected by three factors:

1. A 56 percent reduction in estimated solid waste-related methane emissions (equivalent to almost 2 percent of total county emissions), attributable to the fact that Portland changed landfills during the decade and the current landfill has a better methane collection system.

2. Gasoline sales, which can bounce around considerably from year to year, were low in 2004 (with the reduction from 2003 being equivalent to almost 2 percent of total county emissions).

3. A dramatic fall in industrial energy use since 2000 (more than 20 percent, and equivalent to almost 5 percent of total county emissions).

Based on these facts, Dr. Trexler concludes that the assertion that 2004 emissions came out close to 1990 emissions appears to be significantly due to one-time events (e.g., changing landfills), overarching economic conditions (a slowed economy), and random factors such as relatively low county gasoline sales in 2004. These three factors are significant because they add up to 9 percent of total county emissions. Thus, he notes, it's not clear that all of these variables will continue to work in Portland's favor in helping it achieve its 2010 emission reduction target. Dr. Trexler concludes that it's not appropriate to point to Portland's and Multnomah County's 1990 vs. 2004 emissions as proof that the nation as a whole could as easily cut its GHG emissions back to 1990 levels.

In fact, recent data (April 2007) on state emissions released by the U.S. Department of Energy's Energy Information Administration indicate Oregon's emissions rose by 0.78 percent from 2002

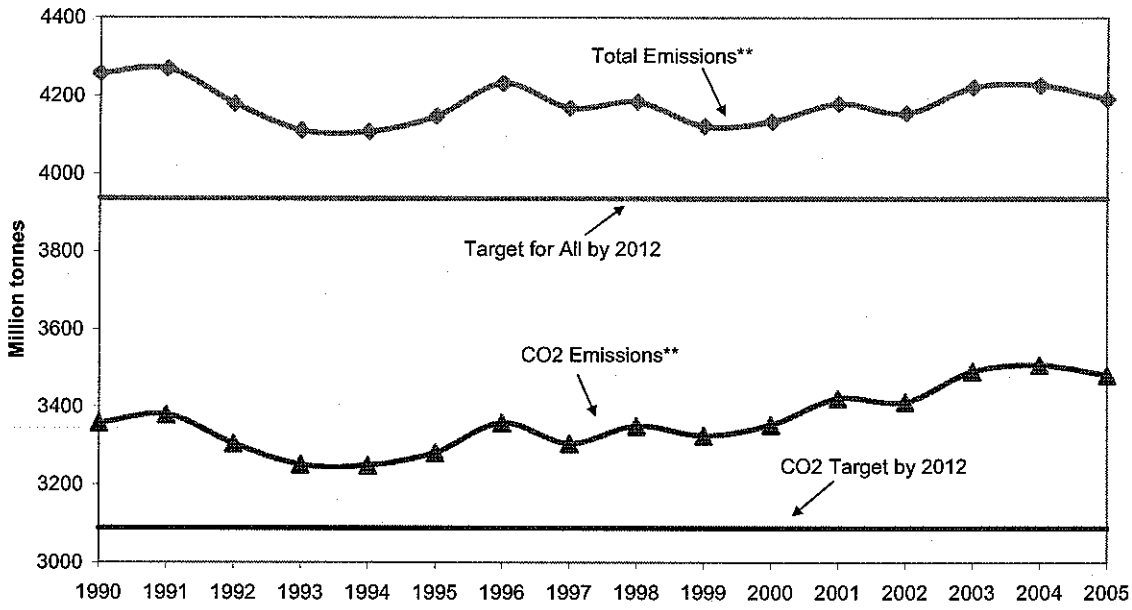
to 2003. This suggests that permanent reductions in Portland will be difficult unless its economy continues to lose industrial and manufacturing jobs

4. European Union Emissions: Myths and Reality

Many policymakers, the media, and public believe that the European Union's Emission Trading System (ETS) has produced reductions in GHG emissions and that the European system could serve as a model for how to reduce growth in GHGs here in the U.S. The ETS was created in 2005; it covers about 12,000 major emitters which produce about 40 percent of EU emissions. The ETS is a market-based, EU-wide system that allows countries to "trade" (i.e., buy and sell) permits to emit CO_2. The EU 15 (the major industrial countries) have a target of achieving an 8 percent reduction in GHGs by 2010.

As shown in **Figure 3**, CO_2 emissions in the EU 15 have risen sharply since 1990. The ETS itself has had little impact in reducing overall emission growth. In fact, overall emissions (including all six of the greenhouse gases) have held constant due to one-time events such as the collapse of industry in East Germany and a switch from coal to gas for electricity generation. As shown in **Figure 3,** in 2005 overall emissions were about 6 percent above the target.

Figure 3. Greenhouse Gas Emissions in the EU-15*



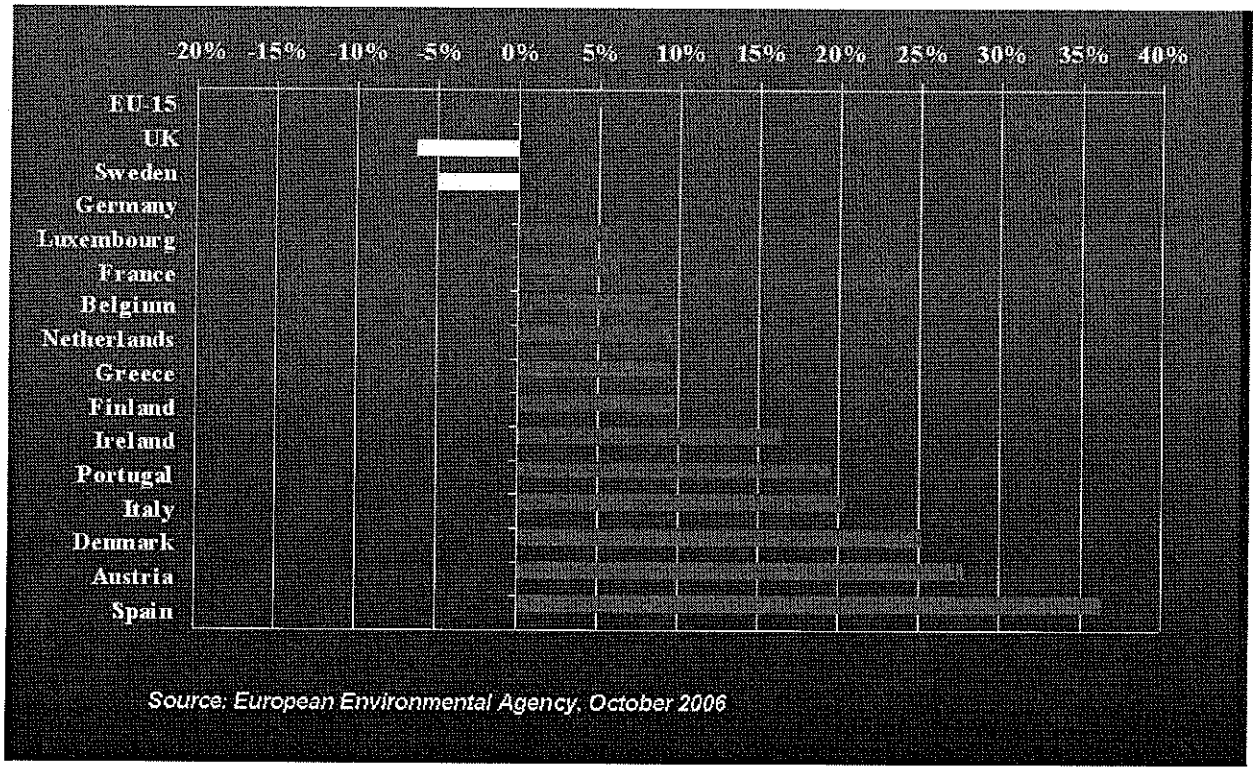
* In CO2 Equivalents

** Excludes land use, land use change and forestry.

Source: "Annual European community Greenhouse Gas Inventory 1990-2005 and Inventory Report 2007", European Environment Agency, version 27 May 2007.

The European Environmental Agency's latest projections (October 2006) for the EU 15 show that without strong new measures, EU 15 emissions will be 7.4 percent *above* 1990 levels in 2010 rather than 8 percent *below* as required by the Kyoto Protocol.**(see Figure 4).**

Figure 4. Greenhouse Gas Emissions in the European Union Projected to Exceed Kyoto Targets in 2010



Now that the ETS has been operational for two years, industry and households are feeling some of the system's effects even though its overall impact on emission growth has been small. As the *Washington Post* reported in "Europe's Problems Color U.S. Plans to Curb Carbon Gases" (April 9, 2007), the ETS has become a bureaucratic morass with a host of unexpected and costly side effects, including a much smaller effect on carbon emissions than planned and many companies complaining that it is unfair. An example is Kollo Holding's factory in the Netherlands which makes silicon carbide, a material used as an industrial abrasive and lining for high-temperature furnaces and kilns. Its managers like to think of their plant as an ecological standout. They use waste gases to generate energy and have installed the latest pollution-control equipment.

But Europe's program has driven electricity prices so high that the facility routinely shuts down for part of the day to save money on power. Although demand for its products is strong, the plant has laid off 40 of its 130 employees and trimmed production. Two customers have turned to cheaper imports from China, which is not covered by Europe's costly regulations, the *Post* reports.

> "It's crazy," said Kusters, the plant director, as he stood among steaming black mounds of petroleum coke and sand in northern Holland. "We not only have the most energy-efficient plant in the world but also the most environmentally friendly."

Of all the effects of the new rules, the rise in the price of power has aroused the most outrage according to the *Washington Post*. Much of the anger of consumers and industries has been aimed at the continent's utility companies. Like other firms, the utilities were given slightly fewer allowances than they needed. But instead of charging customers for the cost of buying allowances to cover the shortfall, utilities in much of Europe charged customers for 100 percent of the tradable allowances they were given—even though the government handed them out free. Electricity rates soared.

> The chief executive of one utility, Vattenfall, which owns a coal plant that is one of the continent's biggest carbon emitters, defended the decision. Lars G. Josefsson, who is also an adviser to German Chancellor Angela Merkel, said higher electricity prices are "the intent of the whole exercise. . . . If there were no effects, why should you have a cap-and-trade system?"

An examination of the actual European emissions data, combined with anecdotal reports like those above on actual operation in the EU, reinforce the idea that the ETS is not having a major impact on emission reductions.

5. Practical Strategies for GHG Reductions

- **The role of economic growth and technology in GHG reduction**

Economic growth can have a positive impact on GHG emission reductions. The U.S., with its dynamic economy and voluntary approach to emission reductions, has cut its energy intensity by 12.2 percent between1997 and 2003 compared to only 7.6 percent in the EU with its mandatory approach (see **Figure 5**).

Technology development and deployment offer the most efficient and effective ways to reduce GHG emissions. A strong economy tends to pull-through capital investment faster. Given the extremely long life of much of the capital stock, the voluntary approach will allow emissions intensity to be reduced in a cost-effective way (see **Figure 6**).

There are only a few basic ways to reduce CO_2 emissions from fossil fuel use: use less fossil fuel or develop technologies to use energy more efficiently, capture emissions or substitute for fossil energy. There is an abundance of economic literature demonstrating the relationship between energy use and economic growth, as well as the negative impacts of curtailing energy use. Long term, new technologies offer the most promise for affecting GHG emission rates and atmospheric GHG concentrations.

Consumers and industry already are responding to market-driven energy prices increases in the past three years by changing their energy use patterns and adopting new, more efficient technologies. For example, gasoline prices increased more than 10 percent a year in each of the

Figure 5. Comparison of EU and US Energy Intensity Reduction 1991-2003

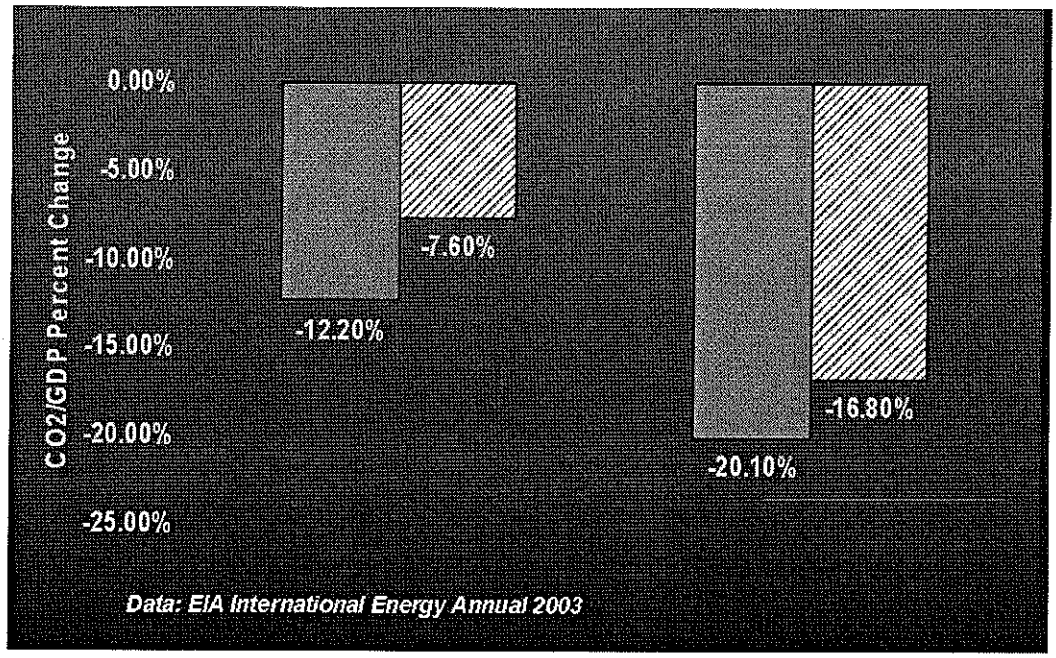
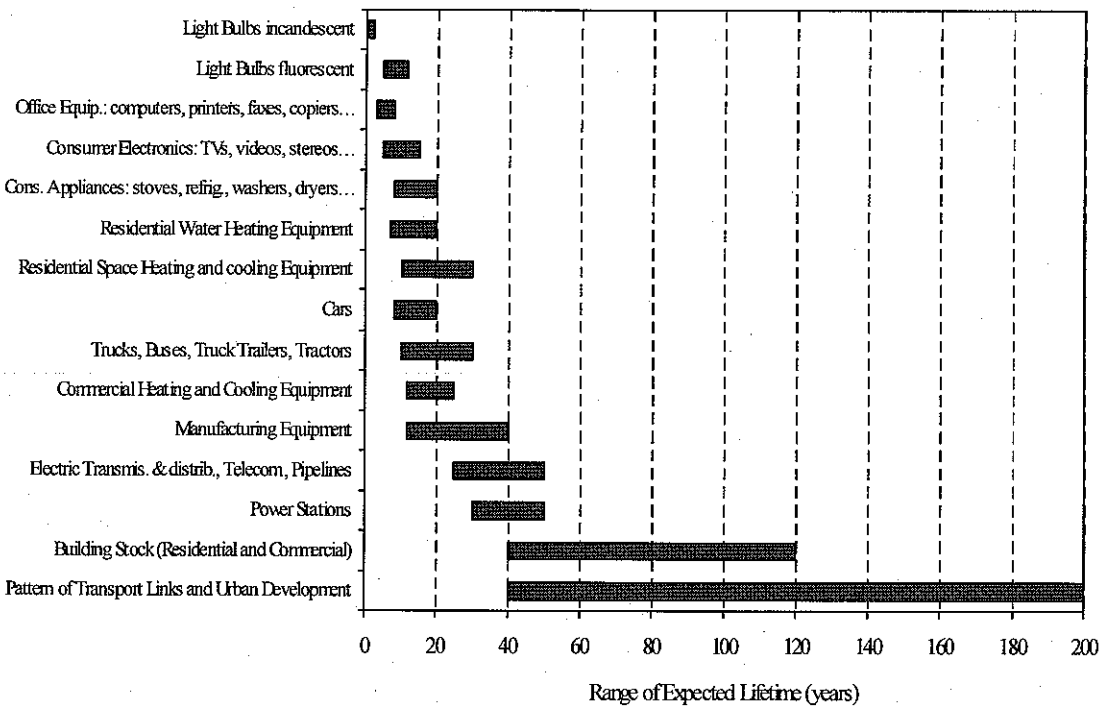


Figure 6. Average Life Spans for Selected Energy-Related Capital Stock



last three years. The impetus of market forces is contributing to the adoption of cost-effective changes in the capital stock and the transportation fleet over the normal capital replacement cycle. According to recent DOE/EIA data, U.S. energy-related CO_2 emissions declined in absolute terms in 2006 by 1.3 percent even though the economy grew by 3.3 percent. In addition, the total carbon intensity of the economy (CO_2 per real dollar of GDP) fell by 4.5 percent in 2006. This is the largest decline since 1990. The market is clearly responding to higher energy prices leading to changes in consumer behavior.

- **Accelerating the uptake of new technology by private as well as nonprofit entities.**

The development of various high technology programs can be accelerated through government programs as well as by encouraging private sector investment. For example, in the electric utility sector, some policies may be of particular help to taxable entities (typically investor-owned utilities or "IOUs" while others would be of more benefit to rural electric cooperatives (which pay no federal income tax.)

One positive step for encouraging the uptake of new technology by IOUs would be to provide more rapid write offs for new investment. Improving the U.S federal tax code to provide more rapid cost recovery through faster depreciation, investment tax credits, and making permanent the 15 percent tax rate on dividends and capital gains received by individuals are positive steps that reduce the cost of capital for investment. U.S. capital cost recovery for energy investments lags that of many of our trading partners. New ACCF research shows that U.S. companies receive only 29 cents after 5 years through depreciation allowances on each dollar of investment in a combined heat and power facility while a company in India gets 56 cents and a Canadian company gets 80 cents back. (see http://www.accf.org/pdf/Energy-Depreciation-Comparison.pdf for full report). Thus, slow capital cost recovery in the U.S. federal tax code places domestic companies at a disadvantage compared to our trading partners and slows the development and installation of new energy-efficient technology.

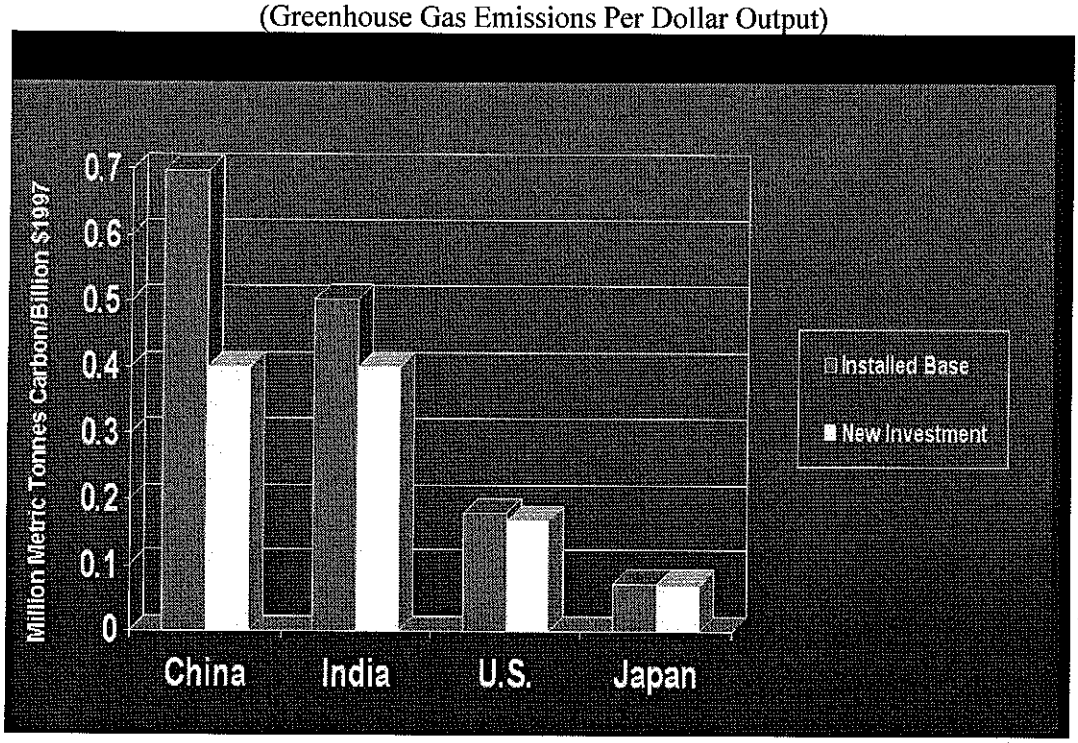
For non-taxable entities such as rural electric cooperatives, encouraging the more rapid adoption of new technologies to reduce emissions could be accelerated by special government bonds, grants or low interest loans. Such policies would ensure that the competitiveness of rural cooperatives is not impaired by tax code reforms which benefit IOUs.

- **International partnerships and technology transfer**

Encouraging the world's top emitters to work together to transfer clean technology is key to global greenhouse gas emission reduction. China's CO_2 emissions surpassed those of the U.S. this year. This fact illustrates how important it is to secure the cooperation and participation of major developing countries to have a real impact on global GHG emissions growth.

Figure 7. Impact of New Technologies on Carbon Emissions

(Greenhouse Gas Emissions Per Dollar Output)



The Asia Pacific Partnership on Clean Development and Climate (APP) — signed in July 2005 between India, China, Korea, Japan, Australia and the United States — is a good start at promoting economic development and the spread of cleaner, less-emitting energy technology. Research by Dr. David Montgomery of CRA International shows that current installed capital equipment in China and India produces almost four times the GHG emissions per dollar of output as U.S capital equipment (see **Figure** 7). Even though China is becoming more energy efficient and is reducing its energy intensity, its new equipment still is far less efficient than that of the United States and Japan. Meanwhile, India is not making much progress in reducing energy intensity. If the APP can encourage the kind of institutional changes in developing countries that help them acquire new and more energy-efficient equipment and production processes it would be a substantial help in reducing the growth of GHGs worldwide. If China and India had access even to current U.S. levels of technology for electricity generation, manufacturing, transportation and building heating and cooling, their carbon emission reductions would be four times larger than those of the EU-15 by 2012 (assuming the EU can meet its Kyoto target).

Conclusions:

Energy use and economic growth go hand-in-hand. Helping the developing world improve its use of its abundant energy resources in ways that are cleaner should be the focus of global climate policies. While climate change is a global issue, reducing emissions in the developed countries should not take priority over maintaining strong economic growth in the United States and other industrial nations as they are the key engines for global economic growth.

Climate change policies should continue to strive to reduce energy intensity as the capital stock is replaced over the business cycle in order to develop new, cost-effective technologies for alternative energy production and conservation, and to encourage the spread of market-based reforms in the developing world. This approach is likely to be much more productive than adopting mandatory CO_2 reduction targets, thereby sacrificing economic well-being and job growth with little or no long-term impact on global GHG emission growth.